

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 01 October 1999 (01.10.99)	Applicant's or agent's file reference IPD/P1189/WOD
International application No. PCT/GB99/00089	Priority date (day/month/year) 21 January 1998 (21.01.98)
International filing date (day/month/year) 12 January 1999 (12.01.99)	Applicant MURPHY, Melanie, Jane et al

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

30 July 1999 (30.07.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer C. Carrié Telephone No.: (41-22) 338.83.38
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference IPD/P1189/WOD	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/00089	International filing date (day/month/year) 12/01/1999	Priority date (day/month/year) 21/01/1998
International Patent Classification (IPC) or national classification and IPC C12Q1/18		
Applicant THE SECRETARY OF STATE FOR DEFENCE et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 30/07/1999	Date of completion of this report 17.02.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Herrero, M Telephone No. +49 89 2399 8542 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/00089

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-21 as originally filed

Claims, No.:

1-37 as originally filed

Drawings, sheets:

1/4-4/4 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/00089

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-37
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-37
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-37
	No:	Claims	

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

SECTION V

2. CITATIONS AND EXPLANATIONS

- 2.1 In view of the priority documents pertaining to the present application, the scientific publication J. Appl. Microbiol. **84**:661-666 (April 1998) indicated in the search report as a P-document, is not to be regarded as state of the art according to Rule 64 (1) PCT as the first date of priority claimed (21.01.98) is valid.
- 2.2 Based on an assay for adenylate kinase the present application discloses procedures which allow a relative rapid testing of the growth characteristics of bacteria, in particular the assessment of antibiotic resistance or susceptibility. The disclosed methods would seem to be neither anticipated nor rendered obvious by the documents cited in the International Search Report, taken into consideration alone or in any combination. Accordingly, present Claims 1-37 would in principle appear to relate to novel and inventive subject-matter susceptible of industrial applicability and therefore to satisfy the criteria set forth in Article 33(2)(3) and (4) PCT.
- 2.3 Nevertheless, with regard to the test kits of Claims 28-34, attention is drawn to the deficiencies pointed out in item 2 of Section VIII below.

SECTION VII

A corresponding publication number should have been given in the description when referring on page 1, line 29 and page 11, line 29 to the International Patent Application Nos. PCT/GB94/00118 and PCT/GB94/01513 (e.g. WO 94/17202 and WO96/02665, respectively)

SECTION VIII

1. Under its present imprecise wording the matter for which protection is sought is not clearly defined in Claim 1, contrary to the requirements of Art. 6 PCT. In view of the supporting description (see e.g. page 3, lines 6-9 or page 10, lines 19-22) it is considered that the broadly formulated Claim 1 should have more accurately defined the essential "use of an assay for adenylate kinase" therein mentioned, for instance, by referring to "The use of an assay for adenylate kinase in an *in vitro* test for the effect of external conditions on the growth characteristics of bacterial cells, wherein a comparison of the extracellular adenylate kinase content of a cell culture with the total intracellular and extracellular content is indicative of the growth status and health of the cell culture"
2. It is clear from the description (cf page 1, lines 27-32 bridging over page 2, lines 1-9) that according to the definition of the present invention ADP is (one of) the essential reagent(s) necessary for assaying adenylate kinase. Since independent Claim 28 does not identify ADP as a necessary constituting component of the intended test kit, the claim does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

In this connection it has to be emphasized that, in order to establish whether a claimed kit of parts satisfies *per se* the criteria set forth by Art. 33(2) and (3) PCT, the unambiguous definition of the essential components which constitute the kit of interest is of utmost importance, irrespective of the intended use of the kit.

3. Moreover, for the sake of clarity and consistency with the rest of the subject-matter claimed, Claim 28 should have better recited, e.g., "A test kit for testing the sensitivity of bacteria to antibiotics according to a method as defined in any of Claims 14 to 24, said kit comprising..."
4. Claims 35, 36 and 37 contain references to the description (i.e. to the Examples). According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/00089

5. The following expressions appear to contain clerical mistakes:

"microorgansims" (page 1, line 27)

"samplesany" (page 3, line 14)

"approximately" (page 7, line 27)

"sensitivity" (page 8, line 32 and Claim 21, first line)

"postive" (page 11, line 20)

"ampillicin" (page 13, line 13)

"chloramphenical" (page 13, line 16)

"contian" (page 18, line 13)

"tytic" (page 20, line 10)

"unit" (page 20, line 13)

"a a" (Claim 17, second line).

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference IPD/P1189/WOD	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 99/ 00089	International filing date (day/month/year) 12/01/1999	(Earliest) Priority Date (day/month/year) 21/01/1998
Applicant THE SECRETARY OF STATE FOR DEFENCE et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

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☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

GB 99/00089

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12Q1/18 C12Q1/06 C12Q1/48

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 96 02666 A (SECR DEFENCE ;SQUIRRELL DAVID JAMES (GB)) 1 February 1996	1-5, 10-12, 28-32, 34-36
A	see abstract	6-9, 13-27, 33, 37
Y	----- PATENT ABSTRACTS OF JAPAN vol. 017, no. 243 (C-1058), 17 May 1993 & JP 04 370100 A (MERCIAN CORP), 22 December 1992 see abstract	1-5, 10-12, 28-32, 34-36
A	----- WO 94 06931 A (MINI AGRICULTURE & FISHERIES ;SANDERS MICHAEL FREDERICK (GB)) 31 March 1994 see abstract; claims 1,6,7 ----- -/--	1,6



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

6 May 1999

Date of mailing of the international search report

10/06/1999

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No

GB 99/00089

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 96 02665 A (SECR DEFENCE BRIT ;SQUIRRELL DAVID JAMES (GB)) 1 February 1996 cited in the application see abstract see page 3, line 5 - line 18 see claims 1,23-26 ---	1-37
A	WO 94 17202 A (SECR DEFENCE BRIT ;SQUIRRELL DAVID JAMES (GB)) 4 August 1994 cited in the application see abstract ---	1-37
A	SQUIRRELL, D. J. ET AL: "Adenylate kinase as a cell marker in bioluminescent assays" BIOLUMIN. CHEMILUMIN., PROC. INT. SYMP., 8TH (1994), 486-489. EDITOR(S): CAMPBELL, ANDREW KEITH;KRICKA, LARRY J.; STANLEY, PHILIP E. PUBLISHER: WILEY, CHICHESTER, UK. CODEN: 62UZAR, XP002102121 see the whole document ---	1-37
A	MURPHY, M. J. ET AL: "The use of adenylate kinase for the detection and identification of low numbers of microorganisms" BIOLUMIN. CHEMILUMIN., PROC. INT. SYMP., 9TH (1997), MEETING DATE 1996, 319-322. EDITOR(S): HASTINGS, J. W.;KRICKA, L. J.; STANLEY, P. E. PUBLISHER: WILEY, CHICHESTER, UK. CODEN: 65JYAO, XP002102122 see the whole document ---	1-37
P,A	BLASCO, R. ET AL: "Specific assays for bacteria using phage mediated release of adenylate kinase" J. APPL. MICROBIOL. (1998), 84(4), 661-666 CODEN: JAMIFK;ISSN: 1364-5072, April 1998, XP002102123 see the whole document -----	1-37

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/00089

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9602666 A	01-02-1996	AU 691940 B	28-05-1998
		AU 2931995 A	16-02-1996
		BR 9508392 A	26-05-1998
		CA 2194458 A	01-02-1996
		CN 1157638 A	20-08-1997
		EP 0774011 A	21-05-1997
		GB 2304892 A, B	26-03-1997
		HU 76447 A	29-09-1997
		JP 10502815 T	17-03-1998
		NO 970106 A	13-03-1997
		NZ 289464 A	28-07-1998
		US 5798214 A	25-08-1998
		ZA 9505846 A	19-02-1996
WO 9406931 A	31-03-1994	AT 149572 T	15-03-1997
		AU 677223 B	17-04-1997
		AU 4827593 A	12-04-1994
		CA 2144867 A	31-03-1994
		DE 69308581 D	10-04-1997
		DE 69308581 T	26-06-1997
		DK 663016 T	01-09-1997
		EP 0663016 A	19-07-1995
		ES 2098781 T	01-05-1997
		GB 2285684 A, B	19-07-1995
		GR 3023654 T	30-09-1997
		IL 107027 A	14-08-1997
		JP 8503847 T	30-04-1996
		NZ 256076 A	26-01-1996
		US 5888725 A	30-03-1999
		ZA 9306813 A	01-07-1994
WO 9602665 A	01-02-1996	AU 698916 B	12-11-1998
		AU 7130594 A	16-02-1996
		BR 9408598 A	18-11-1997
		EP 0788553 A	13-08-1997
		GB 2303919 A, B	05-03-1997
		JP 10502538 T	10-03-1998
		NO 970105 A	13-03-1997
		NZ 268405 A	19-12-1997
WO 9417202 A	04-08-1994	AT 170222 T	15-09-1998
		AU 677627 B	01-05-1997
		AU 5841794 A	15-08-1994
		BR 9406417 A	26-12-1995
		CA 2154462 A	04-08-1994
		CN 1119029 A	20-03-1996
		DE 69412790 D	01-10-1998
		DE 69412790 T	11-02-1999
		EP 0680515 A	08-11-1995
		ES 2120006 T	16-10-1998
		GB 2289945 A, B	06-12-1995
		HU 72396 A	29-04-1996
		NO 952917 A	06-09-1995
		NZ 259576 A	24-06-1997
		US 5648232 A	15-07-1997